# ABSTRACT OF THE DISCLOSURE

A centrifugal fluid pump apparatus includes a control mechanism; and a body including a pump section having an impeller rotating inside a housing; a rotor having an impeller attraction magnet; a motor for rotating the rotor; an impeller attraction electromagnet for attracting the impeller thereto; an impeller-position detection sensor; and hydrodynamic bearing means provided on an inner surface of the housing. The control mechanism has a position sensor output monitoring function or an electromagnet current monitoring function, a motor current monitoring function; and an emergency impeller rotation function. The emergency impeller rotation function includes a rotation termination function of terminating current to the motor and the electromagnet when the failure detection function detects a failure to thereby terminate rotation of the rotor and the impeller; impeller magnetic counterforce application function to apply a current to the electromagnet sufficient to overcome the magnetic attraction force of the rotor to the impeller caused by the magnet; hydrodynamic levitation control detection function to detect rotation of the impeller and the rotor by using a motor current monitored by the motor current monitoring function; motor speed control function for increasing the motor speed and hence the impeller rotation speed up to a predetermined value after the hydrodynamic levitation control detection function detects that the hydraulic bearing coupling between the impeller and the rotor has been made; and impeller magnetic counterforce termination function to terminate current to the electromagnet once the predetermined impeller rotation speed is reached.